

**CITY OF VAUGHAN**

**EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 7, 2016**

Item 5, Report No. 24, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on June 7, 2016.

**5                      REVIEW OF RESIDENTIAL AIR CONDITIONER (AC) REGULATIONS  
CITY OF VAUGHAN  
ALL WARDS – CITY WIDE**

The Committee of the Whole recommends approval of the recommendation contained in the following report of the Deputy City Manager, Planning & Growth Management, Director of Development Planning, Director of Building Standards, and the Director of By-law and Compliance Licensing and Permit Services, dated May 31, 2016:

**Recommendation**

The Deputy City Manager, Planning & Growth Management, Director of Development Planning, Director of Building Standards, and the Director of By-law and Compliance Licensing and Permit Services recommend:

1. THAT the staff report entitled "Review of Residential Air Conditioner (AC) Regulations", which includes the AC Zoning Study ("Consultant Report"), prepared by DeLoyde Development Solutions Ltd. (Attachment #2), BE RECEIVED; and
2. THAT staff be directed to commence the process to amend Zoning By-law 1-88 as amended, to reflect the findings in the AC Zoning Study, proposing changes to current Zoning By-law standards for residential air conditioner (AC) units.

**Contribution to Sustainability**

There is no direct impact to sustainability associated with this report.

**Economic Impact**

There are no funding requirements associated with this report.

**Communication Plan**

There are no Notice requirements associated with this report. However, should Council approve recommendation #2 to amend Zoning By-law 1-88, the City of Vaughan will be required to issue a City wide Public Notice, and initiate an approval process which will include holding a Public Hearing to solicit public input in accordance with the *Planning Act* requirements. The York Chapter of BILD will be consulted through the approval process. Following the enactment of the By-law a letter and information pamphlet will be distributed to Builders, Homeowners, and Staff and posted on the City's website to apprise citizens of the change in the By-law.

**Purpose**

The purpose of this report is to present the findings of the City retained consultant regarding the regulations affecting the lawful placement of Air Conditioning (AC) units. As part of this report, staff recommend that Council direct staff to initialize the process to amend the City's Zoning By-law 1-88, to implement the findings of the completed study. This report was prepared in response to a Council resolution to review the appropriate mechanisms available that ensure builder compliance with the installed placement and location of residential AC units (Council Resolution 61, Report 36, dated September 9, 2014).

## **CITY OF VAUGHAN**

### **EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 7, 2016**

#### Item 5, CW Report No. 24 – Page 2

Excerpt of Council Resolution 61, Report 36, dated September 9, 2014:

*“That staff be directed to undertake a review of the mechanisms available to ensure that builders comply with pertinent By-laws of the City when placing or erecting accessory structures including air conditioners.”*

#### **Background – Analysis and Options**

##### Executive Summary

The Planning & Growth Management Portfolio retained the services of an external consultant “DeLoyde Development Solutions Ltd” to undertake a review of current and best practices regarding the regulatory framework effecting the lawful siting of residential AC units. The report recognizes that the City of Vaughan has a contemporary framework for regulating the lawful siting of AC units. The City effectively utilizes the Zoning By-law, Noise By-law, and Subdivision Agreements as tools that concurrently create a suitable framework governing the placement of AC units. City staff has implemented warning clauses in Subdivision Agreements for new residential developments advising builders and purchasers of the requirement to comply with Zoning By-law 1-88 as it relates to the lawful placement of AC units. However, the current Zoning By-law requirements affecting the location of AC units no longer reflect contemporary urban development standards, requiring a City wide amendment to the Zoning By-law. As the Vaughan Official Plan (VOP 2010) directs for more intensified development, the current Zoning By-law requirements do not provide a practical opportunity to lawfully place AC units, as lot sizes become narrower, and in particular impact the location in the interior side yard between two residential dwellings. Accordingly, the proposed amendment seeks to rectify the outdated AC Zoning By-law requirements.

##### Consultant Findings & Recommendations

The report finds that generally the City of Vaughan has more restrictive zoning regulations affecting the lawful placement of AC units when compared to similar municipalities. The current requirements are adequate for historical Greenfield, suburban development. However, as more intensified urban development occurs, the ability to meet outdated standards, particularly in the interior side yard of residential lots is difficult and in many cases not feasible to comply with for new single detached dwellings. The typical minimum Zoning By-law requirement for the interior side yard to a single detached dwelling is 1.2 metres. The current AC setback requirement in the interior side yard is a minimum of 1.2 metres. Thus, where a dwelling is lawfully constructed to the minimum requirement, the opportunity to lawfully place an AC unit is not feasible. There is no issue on large lots with substantial setbacks. However, lot sizes have become narrower over the past 20 years as seen in more recently approved block plan areas of the City (e.g., Block 40, 33, etc.) In addition, the analysis of best practices identified that the interior side yard is an appropriate location for AC units, heat pumps and pool equipment, as currently permitted by By-law 1-88. However, most municipalities permit less restrictive minimum interior side yard setbacks to such equipment's ranging from no minimum, to a range of 0.3 to 0.6 metres. The consultants review process determined that complete de-regulation would be inadequate in meeting the needs and expectations of the citizens of Vaughan. Accordingly, a review of best practices was undertaken with surrounding and comparable municipalities, as detailed in Attachment #2. The study recommends a revision to Zoning By-law 1-88, as detailed in Table 1 below.

##### Zoning By-law Amendment

The study recommends that the regulations be amended to reflect changing development standards, providing additional flexibility. Specific amendments are proposed within Section 2.0 Definitions, and Section 3.14(a), (d) and (h) within the General Provisions of By-law 1-88. The

**CITY OF VAUGHAN**

**EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 7, 2016**

Item 5, CW Report No. 24 – Page 3

proposed amendments are applicable to central air conditioner units and heat pumps. The following amendments are summarized in Table 1:

Table 1: Amendments for Residential Central AC units in Zoning By-law 1-88

	<b>By-law 1-88 Standard</b>	<b>By-law 1-88 Requirement in all Residential Zones</b>	<b>Proposed Amendments</b>
a.	Minimum Interior Side Yard Setback, and Maximum Encroachment for Rear Yard and Exterior Side Yard for Central Air Conditioner (AC) Units	A minimum 1.2 metre setback from an interior side lot line, and a maximum encroachment of 1.5 metres into a required rear yard and exterior side yard with flankage on local roads.	<p>External ground mounted central air conditioning and heating pumps shall have a minimum setback of 0.6 metres (to allow for surface drainage to pass) from an interior side lot line, and a maximum encroachment of 1.5 metres into the required rear yard and exterior side yard.</p> <p>External Wall mounted central air conditioning and heat pumps shall have a minimum setback of 0.3 metres from an interior side lot line, and a maximum encroachment of 1.5 metres into the required rear yard and exterior side yard.</p>
b.	Definition of External ground mounted and External wall mounted air conditioning and heat pump units	Not defined. The current By-law makes no distinction between ground mounted and external wall mounted central air conditioning units.	External ground mounted air conditioning and heat pumps shall mean mechanical heating and cooling devices that are situated at grade on all weather concrete or equivalent pads.
			External wall mounted air conditioning and heat pumps shall mean mechanical heating and cooling devices that are permanently affixed to a building wall and situated at least 0.3 metres above grade (to allow for surface drainage to pass).
c.	Encroachments of less than 1.2 metres	No encroachment permitted in an interior side yard shall be closer than 1.2 metres to a lot line except eaves and gutters.	By adding the following to the end of the sentence: "and central air conditioning and heat pump units"

## **CITY OF VAUGHAN**

### **EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 7, 2016**

#### **Item 5, CW Report No. 24 – Page 4**

##### **Consideration of Noise By-Law**

The consultant report finds that amending the setback requirements for AC units as proposed does not require amendment to the City of Vaughan's Noise By-law (By-law 96-2006), where a limited number of noise related complaints are received annually by City Staff. The By-law currently permits a maximum of 61 dBA. The consultant report finds that the current noise permissions are incrementally higher than comparable municipalities. However, the City of Vaughan is undertaking a comprehensive review of the noise By-law, where any potential amendments deemed required will be brought forward through the comprehensive review process.

##### **Next Steps**

Provided Council supports the recommended changes to Zoning By-law 1-88, the next phase of this process will involve the Development Planning Department in consultation with the Building Standards Department initializing a City wide Zoning By-law amendment. This process will include holding a Statutory Public Hearing with a required City wide public notice in the Fall of 2016. As part of the approval process City staff will solicit input from residents, contractors, and the building industry, prior to reporting back to a future Committee of the Whole with the final amendments and recommendations. If approved by the Committee of the Whole, the implementing Zoning By-law will be enacted later this Fall through a Council approval.

##### **Relationship to Term of Council Service Excellence Strategy Map (2014-2018)**

This Report supports the following priorities set forth in the Term of Council Service Excellence Strategy Map (2014-2018):

- Update the Official Plan and supporting studies
- Continue to advance a culture of excellence in governance

##### **Regional Implications**

There are no Regional implications associated with this report.

##### **Conclusion**

This Report provides a summary of the analysis and recommendations prepared by the retained consultant. The current zoning standards regulating the lawful placement of AC units no longer reflect contemporary urban development standards. On this basis, City staff support the consultant's findings, and recommend that staff be directed to initiate amendments to Zoning By-law 1-88 in order to update the AC unit requirements. Should the Committee concur, the staff recommendation can be adopted, to allow the next steps to proceed including the preparation of a Zoning By-law Amendment application and holding of a Public Hearing (September 2016) in accordance with the *Planning Act*, followed by a technical report to a future Committee of the Whole and enactment of the implementing Zoning By-law amendment by Council in the Fall of 2016.

##### **Attachments**

1. Context Location Map
2. AC Zoning Study Report

**CITY OF VAUGHAN**

**EXTRACT FROM COUNCIL MEETING MINUTES OF JUNE 7, 2016**

Item 5, CW Report No. 24 – Page 5

**Report prepared by:**

Brandon Correia, Zoning Plans Examiner, Ext.8260  
Natalie Wong, Planner 1, Ext. 8866

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

**REVIEW OF RESIDENTIAL AIR CONDITIONER (AC) REGULATIONS  
CITY OF VAUGHAN  
ALL WARDS – CITY WIDE**

**Recommendation**

The Deputy City Manager, Planning & Growth Management, Director of Development Planning, Director of Building Standards, and the Director of By-law and Compliance Licensing and Permit Services recommend:

1. THAT the staff report entitled “Review of Residential Air Conditioner (AC) Regulations”, which includes the AC Zoning Study (“Consultant Report”), prepared by DeLoyde Development Solutions Ltd. (Attachment #2), BE RECEIVED; and
2. THAT staff be directed to commence the process to amend Zoning By-law 1-88 as amended, to reflect the findings in the AC Zoning Study, proposing changes to current Zoning By-law standards for residential air conditioner (AC) units.

**Contribution to Sustainability**

There is no direct impact to sustainability associated with this report.

**Economic Impact**

There are no funding requirements associated with this report.

**Communication Plan**

There are no Notice requirements associated with this report. However, should Council approve recommendation #2 to amend Zoning By-law 1-88, the City of Vaughan will be required to issue a City wide Public Notice, and initiate an approval process which will include holding a Public Hearing to solicit public input in accordance with the *Planning Act* requirements. The York Chapter of BILD will be consulted through the approval process. Following the enactment of the By-law a letter and information pamphlet will be distributed to Builders, Homeowners, and Staff and posted on the City’s website to apprise citizens of the change in the By-law.

**Purpose**

The purpose of this report is to present the findings of the City retained consultant regarding the regulations affecting the lawful placement of Air Conditioning (AC) units. As part of this report, staff recommend that Council direct staff to initialize the process to amend the City’s Zoning By-law 1-88, to implement the findings of the completed study. This report was prepared in response to a Council resolution to review the appropriate mechanisms available that ensure builder compliance with the installed placement and location of residential AC units (Council Resolution 61, Report 36, dated September 9, 2014).

**Excerpt of Council Resolution 61, Report 36, dated September 9, 2014:**

*“That staff be directed to undertake a review of the mechanisms available to ensure that builders comply with pertinent By-laws of the City when placing or erecting accessory structures including air conditioners.”*

## **Background – Analysis and Options**

### **Executive Summary**

The Planning & Growth Management Portfolio retained the services of an external consultant “DeLoyde Development Solutions Ltd” to undertake a review of current and best practices regarding the regulatory framework effecting the lawful siting of residential AC units. The report recognizes that the City of Vaughan has a contemporary framework for regulating the lawful siting of AC units. The City effectively utilizes the Zoning By-law, Noise By-law, and Subdivision Agreements as tools that concurrently create a suitable framework governing the placement of AC units. City staff has implemented warning clauses in Subdivision Agreements for new residential developments advising builders and purchasers of the requirement to comply with Zoning By-law 1-88 as it relates to the lawful placement of AC units. However, the current Zoning By-law requirements affecting the location of AC units no longer reflect contemporary urban development standards, requiring a City wide amendment to the Zoning By-law. As the Vaughan Official Plan (VOP 2010) directs for more intensified development, the current Zoning By-law requirements do not provide a practical opportunity to lawfully place AC units, as lot sizes become narrower, and in particular impact the location in the interior side yard between two residential dwellings. Accordingly, the proposed amendment seeks to rectify the outdated AC Zoning By-law requirements.

### **Consultant Findings & Recommendations**

The report finds that generally the City of Vaughan has more restrictive zoning regulations affecting the lawful placement of AC units when compared to similar municipalities. The current requirements are adequate for historical Greenfield, suburban development. However, as more intensified urban development occurs, the ability to meet outdated standards, particularly in the interior side yard of residential lots is difficult and in many cases not feasible to comply with for new single detached dwellings. The typical minimum Zoning By-law requirement for the interior side yard to a single detached dwelling is 1.2 metres. The current AC setback requirement in the interior side yard is a minimum of 1.2 metres. Thus, where a dwelling is lawfully constructed to the minimum requirement, the opportunity to lawfully place an AC unit is not feasible. There is no issue on large lots with substantial setbacks. However, lot sizes have become narrower over the past 20 years as seen in more recently approved block plan areas of the City (e.g., Block 40, 33, etc.) In addition, the analysis of best practices identified that the interior side yard is an appropriate location for AC units, heat pumps and pool equipment, as currently permitted by By-law 1-88. However, most municipalities permit less restrictive minimum interior side yard setbacks to such equipment's ranging from no minimum, to a range of 0.3 to 0.6 metres. The consultants review process determined that complete de-regulation would be inadequate in meeting the needs and expectations of the citizens of Vaughan. Accordingly, a review of best practices was undertaken with surrounding and comparable municipalities, as detailed in Attachment #2. The study recommends a revision to Zoning By-law 1-88, as detailed in Table 1 below.

### **Zoning By-law Amendment**

The study recommends that the regulations be amended to reflect changing development standards, providing additional flexibility. Specific amendments are proposed within Section 2.0 Definitions, and Section 3.14(a), (d) and (h) within the General Provisions of By-law 1-88. The proposed amendments are applicable to central air conditioner units and heat pumps. The following amendments are summarized in Table 1:

Table 1: Amendments for Residential Central AC units in Zoning By-law 1-88

	<b>By-law 1-88 Standard</b>	<b>By-law 1-88 Requirement in all Residential Zones</b>	<b>Proposed Amendments</b>
a.	Minimum Interior Side Yard Setback, and Maximum Encroachment for Rear Yard and Exterior Side Yard for Central Air Conditioner (AC) Units	A minimum 1.2 metre setback from an interior side lot line, and a maximum encroachment of 1.5 metres into a required rear yard and exterior side yard with flankage on local roads.	<p>External ground mounted central air conditioning and heating pumps shall have a minimum setback of 0.6 metres (to allow for surface drainage to pass) from an interior side lot line, and a maximum encroachment of 1.5 metres into the required rear yard and exterior side yard.</p> <p>External Wall mounted central air conditioning and heat pumps shall have a minimum setback of 0.3 metres from an interior side lot line, and a maximum encroachment of 1.5 metres into the required rear yard and exterior side yard.</p>
b.	Definition of External ground mounted and External wall mounted air conditioning and heat pump units	Not defined. The current By-law makes no distinction between ground mounted and external wall mounted central air conditioning units.	External ground mounted air conditioning and heat pumps shall mean mechanical heating and cooling devices that are situated at grade on all weather concrete or equivalent pads.
			External wall mounted air conditioning and heat pumps shall mean mechanical heating and cooling devices that are permanently affixed to a building wall and situated at least 0.3 metres above grade (to allow for surface drainage to pass).
c.	Encroachments of less than 1.2 metres	No encroachment permitted in an interior side yard shall be closer than 1.2 metres to a lot line except eaves and gutters.	By adding the following to the end of the sentence: "and central air conditioning and heat pump units"



### Consideration of Noise By-Law

The consultant report finds that amending the setback requirements for AC units as proposed does not require amendment to the City of Vaughan's Noise By-law (By-law 96-2006), where a limited number of noise related complaints are received annually by City Staff. The By-law currently permits a maximum of 61 dBA. The consultant report finds that the current noise permissions are incrementally higher than comparable municipalities. However, the City of Vaughan is undertaking a comprehensive review of the noise By-law, where any potential amendments deemed required will be brought forward through the comprehensive review process.

### Next Steps

Provided Council supports the recommended changes to Zoning By-law 1-88, the next phase of this process will involve the Development Planning Department in consultation with the Building Standards Department initializing a City wide Zoning By-law amendment. This process will include holding a Statutory Public Hearing with a required City wide public notice in the Fall of 2016. As part of the approval process City staff will solicit input from residents, contractors, and the building industry, prior to reporting back to a future Committee of the Whole with the final amendments and recommendations. If approved by the Committee of the Whole, the implementing Zoning By-law will be enacted later this Fall through a Council approval.

### **Relationship to Term of Council Service Excellence Strategy Map (2014-2018)**

This Report supports the following priorities set forth in the Term of Council Service Excellence Strategy Map (2014-2018):

- Update the Official Plan and supporting studies
- Continue to advance a culture of excellence in governance

### **Regional Implications**

There are no Regional implications associated with this report.

### **Conclusion**

This Report provides a summary of the analysis and recommendations prepared by the retained consultant. The current zoning standards regulating the lawful placement of AC units no longer reflect contemporary urban development standards. On this basis, City staff support the consultant's findings, and recommend that staff be directed to initiate amendments to Zoning By-law 1-88 in order to update the AC unit requirements. Should the Committee concur, the staff recommendation can be adopted, to allow the next steps to proceed including the preparation of a Zoning By-law Amendment application and holding of a Public Hearing (September 2016) in accordance with the *Planning Act*, followed by a technical report to a future Committee of the Whole and enactment of the implementing Zoning By-law amendment by Council in the Fall of 2016.

### **Attachments**

1. Context Location Map
2. AC Zoning Study Report

### **Report prepared by:**

Brandon Correia, Zoning Plans Examiner, Ext.8260  
Natalie Wong, Planner 1, Ext. 8866

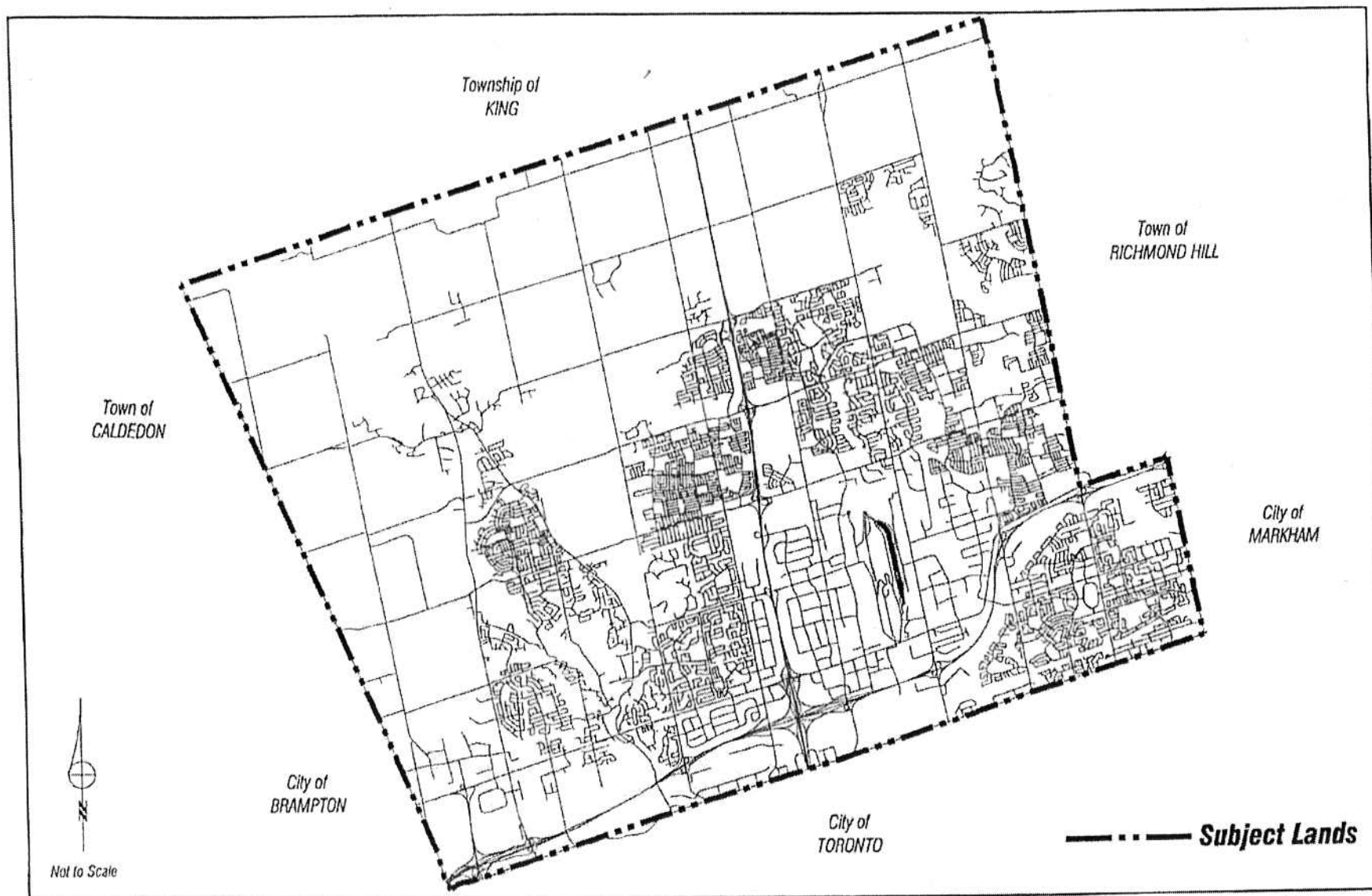
Respectfully submitted,

JOHN MACKENZIE  
Deputy City Manager  
Planning & Growth Management

JASON SCHMIDT-SHOUKRI  
Director of Building Standards  
Chief Building Official

GRANT UYEYAMA  
Director of Development Planning

GUS MICHAELS  
Director of By-law and Compliance Licensing and Permit Services



## Context Location Map

LOCATION:  
Citywide

APPLICANT:  
City of Vaughan



**VAUGHAN**

Development Planning  
Department

Attachment

FILE:  
N/A

DATE:  
May 31, 2016

**1**



# AC Zoning Study

---

*March 11, 2016*

Leo DeLoyde, DeLoyde Development Solutions Ltd.

## Contents

Executive Summary .....	2
City of Vaughan Council Resolution .....	3
Research Question .....	3
Study Methodology .....	3
Policy Framework .....	4
Existing AC Regulation Toolkit in Vaughan .....	4
Comparator Municipalities .....	6
AC Study Findings .....	8
Recommendations .....	11
1. Amend S 3.14 of Zoning By-law 1-88: .....	11
2. Communications .....	12
Conclusions and Implementation .....	12

## Executive Summary

City of Vaughan Council Resolution 61, Report 36 dated Sept. 9, 2014 states: ***"That staff be directed to undertake a review of the mechanisms available to ensure that builders comply with pertinent by-laws of the City when placing or erecting accessory structures including air conditioning units."*** The by-law amendment and communications related recommendations in this report are aimed at addressing the intent of Council's September 9, 2014 resolution.

The City of Vaughan Building Standards Department commissioned a review of Zoning 1-88 and other means of regulating the siting of external air conditioning (AC) units in low to medium density residential neighbourhoods containing single family, semi-detached and townhouse dwellings. The review was designed to respond to the following research question:

***"How are the City's current policies, including its zoning provisions under By-law 1-88, meeting the emerging and future needs of the residents of the City of Vaughan with respect to the placement of air conditioning units and how can these policies and regulations be improved to optimally serve citizens within the broader public interest?"***

A staff team was assembled to work with the consultant to canvass all of the zoning, visual impact, yard access, noise and drainage issues.

Several Greater Toronto Area municipalities were contacted as part of the study to benchmark Vaughan's approach and to identify contemporary best practices for the regulation of air conditioning units in low to medium residential neighbourhoods.

The study found that the City of Vaughan has an effective and contemporary framework for regulating the siting of air conditioning units under Comprehensive Zoning By-law 1-88 and its other by-laws such as Municipal Property Standards By-law 231-2011. In some cases, Vaughan uses Site Plan and Subdivision agreements to assist in ensuring air conditioning units are located in optimum residential locations.

The study concluded that there is a need to update the Zoning requirements for AC units to better address the intensified urban neighbourhoods mandated under Ontario's Places to Grow policies and to promote careful placement by builders, contractors and homeowners.

A communications plan is recommended to create a brochure and web based advice to citizens and builders on minimizing neighbourhood impacts associated with the placement of low noise emitting AC equipment.

## City of Vaughan Council Resolution

Vaughan Council Resolution 61, Report 36 dated Sept. 9, 2014 states: ***“That staff be directed to undertake a review of the mechanisms available to ensure that builders comply with pertinent by-laws of the City when placing or erecting accessory structures including air conditioning units.”***

## Research Question

The study is designed to address the following research question posed by the City of Vaughan staff:

**“How are the City’s current policies, including its zoning provisions under By-law 1-88, meeting the emerging and future needs of the residents of the City of Vaughan with respect to the placement of air conditioning units and how can these policies and regulations be improved to optimally serve citizens within the broader public interest?”**

## Study Methodology

1. Provide an estimate of the nature and extent of compliance challenges throughout the City of Vaughan through discussions with Vaughan staff and an analysis of existing data sources including the volume and distribution of related Committee of Adjustment applications over the past five years as well as the number of related citizen complaints.
2. Consider relevant Council’s Official Plan policies and recent Council resolution on AC placement.
3. Assess the effectiveness of Vaughan’s existing municipal policies and regulatory tools such as Zoning By-law 1-88 and the Property Standards By-law that affect the placement of air conditioning units in residential areas.
4. Examine the design considerations relating to the placement of air conditioning units and their visual, functional and noise impacts.
5. Benchmark Vaughan’s AC regulatory approach with those in other selected jurisdictions including Toronto, Mississauga, Markham, Richmond Hill, Brampton, Burlington and Oakville.
6. In consultation with Vaughan staff, identify best practices and recommend AC related siting objectives and any necessary changes to Vaughan’s regulatory by-laws and



policies to meet the objectives and reduce or eliminate documented compliance challenges.

7. Identify potential community benefits of the recommended regulatory changes including administrative streamlining and reducing the volume of repetitive Committee of Adjustment applications.

## Policy Framework

The City of Vaughan Official Plan (OP) considers its Community Areas as being “among its most important assets. They are where people interact with one another on a daily basis”. The Official Plan seeks to maintain the stability of existing residential communities, direct well designed, context-sensitive growth...”

Vaughan's Managing Growth policies include “a growth strategy based on a transformative shift away from reliance on *greenfield development* toward the promotion of *intensification* and reurbanization within the already built-up area of the City. The OP directs that “Where new *greenfield* communities are developed, they will be planned and built as compact, complete and transit-supportive neighbourhoods”. Healthy living is another key policy concept.

The OP anticipates that “the effects of global climate change will also be felt in Vaughan. Human-induced climate change, through carbon dioxide and greenhouse gas emissions, is expected to cause more extreme hot days. Vaughan will encourage energy efficient *development* and retrofitting of existing *development* to significantly reduce air emissions while ensuring saving on heating and cooling costs”.

Vaughan's OP provides an excellent policy foundation underpinning its zoning regulations. The OP policies recognize the transformation of the community to a compact form while providing for healthy and context sensitive development. These policies, in combination with the recognition of the impacts of climate change and the need to reduce energy use, are considered in the recommendations in this study.

## Existing AC Regulation Toolkit in Vaughan

Vaughan uses several approaches to ensure AC units are placed in optimum locations consistent with its Official Plan goal of creating livable and healthy neighbourhoods as set out in Table 1 below:



Table 1

## Vaughan's Current AC Regulation Toolkit

Name	Description
<b>Zoning By-law 1-88</b>	General provisions section prohibits AC units within 1.2 m of a side lot line.
<b>Property Standards By-law 231-2011</b>	<p>The purpose of the Property By-law is to set out standards for properties so that they are not a visual blight or nuisance to neighbours, affecting the enjoyment of their own property.</p> <p><b>5.21 Heating, Ventilating and Air Conditioning</b></p> <p>(1) All heating, ventilation and mechanical systems of a building shall be provided, maintained and operated free from safety hazards and kept in good repair.</p>
<b>Noise By-law 96-2006</b>	<p>Under the By-law, "NOISE" means unwanted sound;</p> <p><b>Section 8. AIR CONDITIONERS, HEAT PUMPS, AND SIMILAR DEVICES</b></p> <p>No person shall use or operate or cause to be used or operated any residential air conditioner, heat pump, or similar device, the noise from which has a level greater than 61 dBA when measured at the point of reception.</p>
<b>Subdivision Agreements</b>	New subdivision agreements for townhouses sometimes include clauses that require the approval of AC and other mechanical units on building plot plans that perform within the upper noise limit of 61 dBA. Securities may be held to ensure compliance.
<b>Site Plan Control</b>	The Vaughan Planning Department requires developers of cluster and street townhouse developments to show the location of air conditioning units on site plan approval application drawings to ensure their proper siting.

Vaughan has a robust array of by-laws and approaches to govern the proper placement of air conditioning units.

Vaughan's 1.2 m minimum side lot line setback requirement for AC equipment can be met in rural and very low density residential settings. In the contemporary compact urban communities called for in the Vaughan Official Plan, it is very difficult to meet the 1.2 m setback for air conditioning units in side yards given typical residential lot widths.

## Comparator Municipalities

The Terms of Reference for this study called for the comparison of Vaughan's residential related AC zoning regulations with those in neighbouring and other GTA municipalities. Many of the sampled municipalities had AC related zoning regulations in the General Provisions sections of their Zoning By-laws. Refer to Table 2 below for a comparison of the City of Vaughan's AC regulations with those of select GTA municipalities.

**Table 2**

### AC Zoning Comparison between the City of Vaughan and Comparator Municipalities

<b>Municipality</b>	<b>By-law</b>	<b>AC Regulations</b>
<b>Vaughan</b>	<b>1-88</b>	<p><b>S. 3.14 General Provisions - Permitted Encroachments into Yards</b></p> <p><b>a) Window type air conditioners (other than central AC units) - 0.5 m maximum encroachment</b></p> <p><b>h) Central air conditioners shall have a minimum setback of 1.2 m from an interior lot line and a maximum encroachment of 1.5 m into a required rear yard and exterior side yard if on local roads</b></p>
<b>Toronto</b>	<b>569-2013</b>	<p><b>10.5.40.60 Permitted Encroachments</b></p> <p><b>(8) Equipment</b></p> <p><b>In the Residential Zone category, the following wall mounted equipment on a building may encroach into required minimum building setbacks as follows, if the equipment is no closer to a lot line than 30 cm</b></p> <p><b>(D) air conditioner, a maximum of 90 cm:</b></p> <p><b>(i) into a required minimum rear yard setback</b></p> <p><b>(ii) into a required minimum side yard setback if it is not located above the first storey.</b></p>

Mississauga	225-2007	4.1.6.1 External heating, air conditioning, home back-up generator, and pool heating/filtering equipment may be located in a required yard, other than a front yard, provided that it is not closer than 61 cm to any lot line.
South Oakville	2014-014	4.3 Allowable Projections Maximum Total Projection into a Yard Air conditioners, heat pumps, swimming pool pumps, filters, and heaters to 60 cm from the applicable lot line.
North Oakville	2009-189	4.26 External Air Conditioning and other Equipment In any <i>residential</i> zone or zone which abuts a <i>residential use</i> , external heating or air conditioning equipment, swimming pool pumps, and filters <i>shall not</i> be located in any <i>side yard</i> , or <i>rear yard</i> closer than 60 cm from the side or rear lot lines or in any <i>front yard</i> further than 1.5 m from the <i>front wall</i> of the building.
Burlington	2020	Unitary Equipment includes central air conditioning units, heat pumps and swimming pool filters. Unitary Equipment shall set back a minimum of 60 cm from a side or rear lot line and a maximum of 1.5 m the front wall of a dwelling

Of the municipalities surveyed, Markham, Richmond Hill and Brampton had no AC related zoning regulations in their Zoning By-laws. See Table 3 below.

**Table 3**

**Comparator Municipalities Having No AC Zoning Regulations**

Municipality	By-law	AC Regulations
Markham	177-96	There are no zoning regulation setbacks for AC units in any yard.
Richmond Hill	12 Zoning By-laws	There are no zoning regulations for on-ground or wall mounted air conditioners or other equipment.
Brampton	270-2004	There are no zoning regulations for on-ground or wall mounted air conditioners or similar equipment.

## AC Study Findings

### 1. Vaughan AC Zoning Regulation Comparisons With Other Municipalities

Vaughan's Zoning By-law AC regulations are comparatively more restrictive than the municipalities surveyed. Vaughan's requires a minimum 1.2 m AC interior side yard setback that is double the requirements in Burlington (60 cm), Oakville (60 cm) and Mississauga (61 cm). Vaughan's Zoning By-law does not make any distinction between ground and wall mounted AC units.

Toronto has taken a different approach that differentiates between ground mounted and wall mounted AC units. Toronto's new Zoning By-law requires a minimum side yard setback of 90 cm for ground mounted units and 30 cm for wall mounted AC units.

Vaughan requires a 1.2 m minimum interior lot line setback compared to no AC regulations in Brampton, Markham and Richmond Hill. Given the minimum required setbacks in the various low density zones, the Vaughan By-law effectively prevents AC units from being installed in interior side yards in most contemporary compact urban neighbourhoods. A strong case can be made to reduce Vaughan's AC interior side yard zoning setbacks to respond to current development patterns.

The updated AC zoning regulations proposed in this review will significantly reduce Vaughan's current 1.2 m AC side yard setback to a more contemporary standard of 60 cm for ground mounted and 30 cm for wall mounted AC units.

### 2. Non-Compliance with Vaughan Zoning By-law 1-88

Visits were made to newer residential areas in the City of Vaughan in November and December 2015 to determine the degree of AC related Zoning By-law compliance. Many low density residential properties were found to have ground mounted air conditioning units in interior side yards well within the maximum 1.2 metre setback requirement. In some locations, up to one-quarter of the side yards observed contained non-compliant ground mounted air conditioning units. The updated AC zoning regulations recommended in this report will reduce but not eliminate Vaughan's existing AC zoning non-compliance situation.

### 3. Community Concerns Involving AC Placement

Some residents complain about their neighbour's non-compliant air conditioning unit placement thus becoming a source of conflict between neighbours. In turn, such complaints can trigger time consuming investigations and moderately costly Minor Variance applications to the City's Committee of Adjustment (C of A).

Table 4 examines recent trends involving AC related C of A applications over the past five years. From a City perspective, repetitive AC related variance applications place a burden upon the City's professional and administrative staff as well as Committee of Adjustment members. From a community perspective, citizens and/or builders must take time to apply for and navigate through the C of A approval process.

**Table 4**

**City of Vaughan Annual Volume of AC Related C of A Applications  
2010-15**

<b>Year</b>	<b>Volume of AC Applications*</b>
2015	42
2014	49
2013	41
2012	31
2011	30
2010	23
<b>Average</b>	<b>36</b>

\*Note: Applications could involve multiple variances including items other than AC unit placement. The City of Vaughan's 2016 C of A fee is \$955.00

There is an upward trend on the number of AC related zoning variance applications. This upward trend is expected to continue over time under Vaughan's current AC zoning framework. Typically, AC related C of A applications are approved by the City's Committee of Adjustment.

Updated AC zoning regulations should help reduce AC related C of A volumes and their attendant administrative and community costs.

#### **4. Visual Impact Central AC Placement**

Field visits confirmed that side yard AC units do not have a significant visual impact from the street. Vaughan prohibits AC units in front yards and carefully reviews townhouse site plans to ensure that AC units are placed in unobtrusive service locations, some of which are landscaped. It is recommended that Vaughan continue its current practice of preventing AC units from being located in front yards.

#### **5. AC Unit Noise and Vibration Impacts**

Air conditioners and heat pumps generate some noise and vibration. According to our research, excessive AC noise is the main source of complaints in residential neighbourhoods in many different countries. AC noise reflects off of close-by building walls and can be a problem if neighbours have window openings close by AC units.

Quality AC units are designed to minimize compressor and fan noise. Air flow related noise is minimized through the use of flatter profile fan blades in newer AC models. Large capacity, lower efficiency AC units can potentially generate relatively high levels of noise and should be discouraged and/or replaced by quiet efficient units. As AC units age, AC compressors become progressively more noisy and waste energy especially if they are not serviced regularly.

Higher electricity costs provide a compelling reason to replace older, noisy, worn out AC units. Vibration can be minimized by mounting AC units on dampeners. Regular maintenance and cleaning can help minimize noise.

Best practice communities like Vaughan incorporate maximum noise emission standards in their Noise By-laws. Numerical standards allow for objective measurement using certified noise measurement equipment. Numerical standards provide a solid basis for enforcement and, if necessary, prosecution to compel compliance. It is recommended that Vaughan continue to use of maximum numerical noise emissions standards in the Noise By-law.

Vaughan's Noise By-law 96-2006 authorizes noise emissions up to 61 dBA which is a somewhat higher noise emission allowance compared to leading cities in Canada, Europe, United States and Australia. Ontario's Provincial noise emissions standards under the Environmental Protection Act identify 55 dBA as a maximum daytime standard and 45 dBA during evening hours. Ambient noise levels in parts of the City near major highways can equal or exceed 61 dBA which can mask air conditioning related noise. Based on our research, 61 dBA noise levels from AC equipment can be noticeable especially during the quieter night time hours.

Consideration was given to recommending reductions in maximum noise emissions during night time hours. Since there are very few AC related Noise By-law complaints, the staff team concluded that there is no need to amend the Vaughan Noise By-law. Should AC noise be raised as an issue during the review of the Vaughan Noise By-law currently underway, the City has two options. The first option would be to adopt a reduced night time maximum noise emission standard between 10 pm and 7 am. The second option is to adopt a Noise By-law amendment permitting no more than 3 to 5 dBA of AC noise emissions above ambient noise levels for different parts of the City. The second approach requires additional administrative resources and base noise mapping of Vaughan's community areas.

Vaughan's Property Standards By-law can also be used to compel owners to remove damaged or noisy AC units. No changes are needed to Vaughan's Property Standards By-law.

## **6. Side Yard Access**

Placement of ground mounted AC units near side lot lines has potential to obstruct or reduce access between front and side yards. No cases of access blockage were observed during field investigations.

## **7. Potential Grading and Drainage Interference**

Grading and drainage are key considerations in compact community subdivisions. Although there has not been many documented problems associated with ground mounted AC units, such units can partially block drainage if they are poorly installed. Wall mounted AC units do not block drainage flows during heavy storm events. It is recommended that the updated AC Zoning Regulations permit and promote the installation of wall mounted AC units to protect vital storm water drainage pathways in residential subdivisions.



## 8. Preferred AC Unit Siting in Low Density Neighbourhoods

Over the past few decades, Vaughan has reduced minimum lot sizes to achieve its compact city transformation. Citizens sometimes prefer to maximize the use and enjoyment of front and rear yard amenity areas. There is some anecdotal evidence that residents prefer to shift AC units into unused side yards thus maximizing available front and rear yard amenity spaces.

Builders often prefer to install central AC units in close proximity to furnace units to minimize wiring and coolant line runs between the central external AC unit and the furnace. Furnaces are often located mid-house close to an exterior wall triggering the installation of AC units in side yards. Builders and AC installers must install AC units that meet minimum performance and safety codes.

Higher quality AC units tend to be quieter and use less energy and should be promoted by the City of Vaughan.

## Recommendations

Based on the study findings, it is recommended that the City of Vaughan modify its AC related regulatory framework and implement a communications plan as follows:

### 1. Amend S 3.14 of Zoning By-law 1-88:

**Delete current S3.14 sections which read:**

S. 3.14 General Provisions - Permitted Encroachments into Yards

- a) Air conditioners other than central AC units - 0.5 m maximum
- h) (Central AC units) Minimum setback of 1.2 m from interior lot line and maximum encroachment of 1.5 m into required rear yard and exterior side yard if on local roads

**And replace them with:**

S. 3.14 General Provisions - Permitted Encroachments into Yards

- a) Air conditioners other than central AC units - 0.5 m maximum (no change)
- h) External ground mounted central air conditioning and heating pumps shall have a minimum setback of 0.6 m from an interior lot line and maximum encroachment of 1.5 m into required rear yard and exterior side yard if on local roads.

External wall mounted central air conditioning and heating pumps shall have a minimum setback of 0.3 m from an interior lot line and maximum encroachment of 1.5 m into required rear yard and exterior side yard if on local roads.

**Revise Section 3.14 d. which currently reads** "Notwithstanding paragraphs (a), (b), and (c) no encroachment permitted in an interior side yard shall be closer than 1.2 metres to a line except

eaves and gutters" by adding the words, "and central air conditioning and heat pump units".

#### **Add the following new Definitions in Section 2 of Bylaw 1-88**

External ground mounted air conditioning and heat pumps shall mean mechanical heating and cooling devices that are situated at grade on all weather concrete or equivalent pads.

External wall mounted air conditioning and heat pumps shall mean mechanical heating and cooling devices that are permanently affixed to a building wall and situated at least 30 cms above grade.

## **2. Communications**

It is important to engage the public, contractors and the building industry prior to making any regulatory changes with respect to AC units. The City of Vaughan must issue a public notice and the Committee of the Whole must hold a public meeting under the Planning Act prior to adopting the recommend Zoning By-law changes in this report.

Once the By-law changes have been made, it is recommended that a brochure be prepared to explain the changes to the public, building industry and heating and cooling contractors. The brochure should recommend the use of low noise emission and low energy consuming units consistent with Vaughan's sustainability goals. The brochure would also inform Vaughan residents on recommended AC unit performance and siting thus promoting good neighbour relations. The brochure should be included on the City of Vaughan's website and physically distributed at City Hall and other facilities.

## **Conclusions and Implementation**

As Vaughan's laudable intensification and compact urban form goals continue to manifest, there is a need to assess whether there is a need to update municipal policies and by-laws. This study identifies how Vaughan's policies and AC regulations can be improved to optimally serve citizens within the broader public interest.

The City of Vaughan has a robust system of regulating AC units to achieve its community goals identified in the Vaughan Official Plan. The purpose of this study is to determine whether the City of Vaughan's regulatory framework with respect to AC units is meeting the emerging and future needs of the residents.

The recommendations in this report address Vaughan Council's September 9, 2014 resolution and the AC research question posed by City of Vaughan Building Standards Department. The revised by-laws should be communicated to the public and building industry.

This report recommends:



- ✓ Amendments to the City of Vaughan's Zoning By-law 1-88 to better address current residential development realities while encouraging the use of wall mounted AC units to protect vital lot drainage systems especially during significant storm events
- ✓ The City of Vaughan undertake web and brochure based communications to inform citizens, contractors and builders on the AC regulation changes and recommended AC unit installation